

REMARKS

In accordance with the foregoing, claims 1, 4, 6, 7, 9, and 15 have been amended. Claims 1-16 are pending, with claims 1, 4, 6, and 9 being independent. No new matter is presented in this Amendment.

Request for Indication of Whether Substitute Specification Has Been Entered and Replacement Sheets of Drawings Have Been Accepted

A substitute specification and three replacement sheets of drawings containing FIGS. 1-3 were filed on January 17, 2006, but the Office Actions of April 1, 2008, and September 16, 2008, do not indicate whether the substitute specification has been entered and the replacement sheets of drawings have been accepted. Accordingly, it is respectfully requested that the Examiner indicate this in the next Office Action.

The applicant made this same request on page 10 of the Amendment of June 11, 2008, but the Examiner did not respond to this request in the Office Action of September 16, 2008.

Furthermore, one replacement sheet of drawings containing FIG. 3 was submitted with the Amendment of June 11, 2008, but the Office Action of September 16, 2008, does not indicate whether the replacement sheet of drawings has been accepted. Accordingly, it is respectfully requested that the Examiner indicate this in the next Office Action.

Claim Rejections Under 35 USC 112

Claims 7 and 8 have been rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. This rejection is respectfully traversed.

The Examiner states as follows:

Specifically, claim 7 recites in lines 3-4, "...controller calculates a target track to be jumped to". It is unclear to the Examiner how the controller calculates a "target track". Does Applicant mean to recite "...controller calculates a distance to the target track to be jumped to" OR, "...controller calculates the drive

signal needed to travel to the target track to be jumped to". [sic]
Clarification and/or correction is required.

Claim 8 is rejected due to it's [sic] dependency upon
rejected base claim 7.

It is submitted that the applicant intends claim 7 to mean exactly what it says—that "the controller calculates a target track to be jumped to." The applicant did not intend to recite that "the controller calculates a **distance to the target track to be jumped to**," or that "the controller calculates the **drive signal needed to travel to the target track to be jumped to**" as conjectured by the Examiner.

It is submitted that claim 7 is consistent with paragraph [0031] of the specification, both as originally filed on January 17, 2006, and as amended as follows in the Amendment of June 11, 2008:

[0031] The controller 203-4 calculates a target track to be jumped to and sets an output time of the break-brake voltage. When the pickup arrives at the target track, the controller 203-4 conducts outputs the break-brake voltage to the driver 204.

It is submitted that claim 7 is also consistent with paragraph [0040] of the specification, both as originally filed on January 17, 2006, and as amended as follows in the substitute specification filed on January 17, 2006, and in the Amendment of June 11, 2008:

[0040] After the kick voltage has been conducted-output to the driver, the controller 203-4 calculates a target track to be jumped to and determines an output time of the break-brake voltage in step-operation 308. When the pickup 201 arrives at the target track, the controller 203-4 conducts-outputs the break-brake voltage to the driver 204 in step-operation 309.

It is submitted that claim 7 is also consistent with the description in operation 308 in FIG. 3 as originally filed on January 17, 2006, and as amended as follows in replacement FIG. 3 submitted with the Amendment of June 11, 2008:

**CALCULATE TARGET TRACK TO BE JUMPED TO AND
DETERMINE OUTPUT TIME OF BREAK-BRAKE VOLTAGE**

Accordingly, it is submitted that claim 7 does in fact particularly point out and distinctly claim the subject matter that the applicant regards as the invention as required by 35 USC 112, second paragraph.

The above discussion is based on claim 7 as it was considered by the Examiner in the Office Action of September 16, 2008. However, claim 7 has been amended as follows in this Amendment:

7. The apparatus of claim 6, wherein after the controller has output the track jump start signal to the driver, the controller calculates ~~a~~the target track to-be-jumped-to and sets an output time of a track jump end signal.

It is submitted that claim 7 in its present form also complies with 35 USC 112, second paragraph, for at least the same reasons discussed above that claim 7 as it was considered by the Examiner in the Office Action of September 16, 2008, complies with 35 USC 112, second paragraph.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 7 and 8 (i.e., claim 7 discussed above and claim 8 depending therefrom) under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention be withdrawn.

Claim Rejections Under 35 USC 103

Rejection 1

Claims 1-6 and 9-16 have been rejected under 35 USC 103(a) as being unpatentable Nakatsu et al. (Nakatsu) (U.S. Patent No. 4,955,009) in view of Akiyama (U.S. Patent No. 5,712,835). This rejection is respectfully traversed.

Claim 1

Feature 1

It is submitted that Nakatsu and Akiyama do not disclose or suggest "a servo to judge a position of the pickup based on the error signal, generate a track jump start control signal based on the judged position of the pickup, and generate a track jump end control signal" as recited in independent claim 1.

The Examiner states as follows:

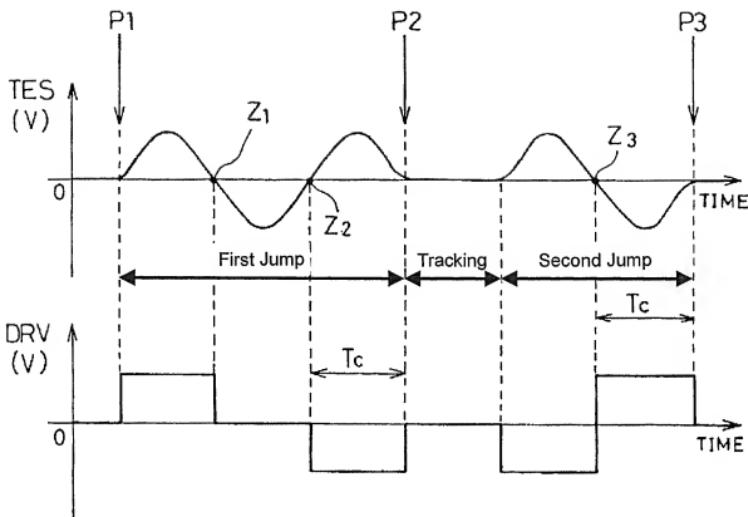
Nakatsu fails to expressly teach that the track jump start control signal is based on the judged position of the pickup as now recited.

AKIYAMA teaches an optical disk drive apparatus wherein in an access operation to an adjacent track, a first and second track jump are implemented. Akiyama teaches that prior to the second track jump operation, "the position of the light spot is corrected...and made from the corrected, appropriate position" (column 4:59-66); and further teaches that the corrected, appropriate position is the center of the track (see column 9:5-11). Akiyama is therefore interpreted as teaching that the track jump start control signal is based on the judged position of the pickup, since the second track jump starts only after the position of the light spot has been corrected.

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of NAKATSU per the teachings of AKIYAMA, for the purpose of improving the accuracy of the access operation.

Column 9, lines 5-11, of Akiyama relied on by the Examiner is part of the detailed description of the feature shown in FIG. 3 of Akiyama in which a tracking operation is performed by the tracking control unit 6 shown in FIG. 2 of Akiyama between the first track jump from P1 to P2 shown in FIG. 1 of Akiyama that is performed by the track jump control unit 8 in FIG. 2 of Akiyama, and the second track jump from P2 to P3 shown in FIG. 1 of Akiyama that is performed by the track jump control unit 8 in FIG. 2 of Akiyama. Column 4, lines 59-66, of Akiyama relied on by the Examiner is part of the summary of the invention that refers to this same feature. The tracking operation inserted between the first jump and the second jump is shown in the following marked-up copy of FIG. 3 of Akiyama:

FIG. 3



However, the tracking operation between the first jump and the second jump is optional, as described in the following passage in column 8, line 61, through column 9, line 17, of Akiyama (emphasis added), which includes column 9, lines 5-11, relied on by the Examiner:

In the present embodiment, described is an arrangement wherein the track jumping is controlled so that after the first track jump the tracking operation is conducted until the second track jump starts. But, the second track jump may start consecutively after the first track jump without a tracking operation.

Such an arrangement has an advantage of reducing the access time by the time spent for the tracking operation, in comparison with the arrangement wherein the tracking operation is inserted between two jumps, though the position of the light spot at the start of the second track jump may possibly be a little out of

the right place. On the other hand, a stable tracking operation after the second track jump is enabled under the arrangement of the present embodiment, since the tracking operation is resumed after the first track jump, thereby appropriately positioning the light spot to the correct position in the center of the track before the start of the second track jump, although the access time is a little longer than that in the above arrangement. Accordingly, whether or not a tracking operation is inserted between the first and second track jumps is determined, depending on whether the improvement of accuracy in the access operation or the reduction of the access time is important.

The Examiner is of the opinion that Akiyama discloses the feature "generat[ing] a track jump start control signal based on the judged position of the pickup" recited in claim 1 because Akiyama does not generate the track jump start control signal for the second jump shown in FIG. 3 until after the light spot has been centered in the track at position P2 as shown in FIG. 1 by the tracking operation between the first jump and the second jump shown in FIG. 3. However, since the tracking operation is optional, it is submitted that the generation of the track jump start control signal for the second jump cannot reasonably be considered to be generated "based on the judged position of the pickup" as recited in claim 1, because the same jump start control signal is generated regardless of whether the light spot is presumably centered in the track at position P2, as may be the case when the tracking operation between the first jump and the second jump is performed, or is off the center of the track at position P2, as may be the case when the tracking operation between the first jump and the second jump is not performed.

Furthermore, the only element in FIG. 2 of Akiyama that judges the position of the light spot between the first jump and the second jump is the tracking control unit 6. However, the tracking control unit 6 does not output a signal to the track jump control unit 8 to tell the track jump control unit 8 that the light spot is centered in the track at position P2 so that the track jump control unit 8 can generate the track jump start control signal for the second jump. Rather, the track jump control unit 8 generates the track jump start control signal for the second jump as soon as the track jump control unit 8 controls the switch 9 in FIG. 2 to switch from position a to position b as described in the following passage in column 7, lines 38-48, of Akiyama:

The first track jump from the position P1 to the position P2 is carried out in accordance with the above control procedure. Consecutively conducted is the second track jump from the position P2 to the position P3, in the direction opposite to that of

the first track jump. The second track jump is a 2-track jump, which is executed under the control in the following procedure.

First of all, as soon as the switch 9 is controlled so that the driving unit 7 is connected with the track jump control unit 8 through the position b, the track jump control unit 8 outputs DRV for accelerating the objective lens 3.

Thus, it appears that there is no way for the track jump control unit 8 to know whether the light spot is actually centered in the track at the position P2 before it generates the track jump start control signal for the second jump. Furthermore, it is submitted that nothing whatsoever in Akiyama discloses or suggests that the track jump control unit 8 controls the switch 9 in FIG. 2 to switch from position a to position b based on an actual judgment that the light spot is centered in the track at position P2. Accordingly, it is submitted that the track jump control unit 8 does not generate the track jump start control signal for the second jump based on a judged position of the light spot.

For at least the foregoing reasons, it is submitted that Nakatsu and Akiyama do not disclose or suggest "a servo to judge a position of the pickup based on the error signal, generate a track jump start control signal based on the judged position of the pickup, and generate a track jump end control signal" as recited in claim 1.

Feature 2

It is submitted that Nakatsu and Akiyama do not disclose or suggest "a driver to move the pickup directly to a target track of the optical disc in response to the track jump start control signal, and stop moving the pickup in response to the track jump end control signal" as now recited in claim 1 as amended in this Amendment.

The Examiner has relied on column 9, lines 5-11, of Akiyama, which is part of the detailed description of the feature shown in FIG. 3 of Akiyama in which a tracking operation is performed by the tracking control unit 6 shown in FIG. 2 of Akiyama between the first track jump from P1 to P2 shown in FIG. 1 of Akiyama that is performed by the track jump control unit 8 in FIG. 2 of Akiyama, and the second track jump from P2 to P3 shown in FIG. 1 of Akiyama that is performed by the track jump control unit 8 in FIG. 2 of Akiyama. Column 4, lines 59-66, of

Akiyama relied on by the Examiner is part of the summary of the invention that refers to this same feature.

In FIG. 1 of Akiyama, P1 is a starting track, P2 is an intermediate track, and P3 is a target track. However, the track jump control unit 8 in FIG. 2 of Akiyama does not control the optical pickup 4 in FIG. 2 to move directly from the starting track P1 to the target track P3 as would be necessary to Akiyama to arguably teach "a driver to move the pickup directly to a target track of the optical disc in response to the track jump start control signal, and stop moving the pickup in response to the track jump end control signal" as now recited in claim 1. Rather, the track jump control unit 8 controls the optical pickup 4 to move indirectly from the starting track P1 to the target track P3 via the intermediate track P2.

For at least the foregoing reasons, it is submitted that Nakatsu and Akiyama do not disclose or suggest "a driver to move the pickup directly to a target track of the optical disc in response to the track jump start control signal, and stop moving the pickup in response to the track jump end control signal" as now recited in claim 1 as amended in this Amendment.

Claim 4

It is submitted that Nakatsu and Akiyama do not disclose or suggest "generating a track jump start control signal based on the judged position of the pickup" and "outputting the track jump start control signal to a driver to move the pickup directly to a target track of the optical disc" as now recited in independent claim 4 as amended in this Amendment for at least the same reasons discussed above that Nakatsu and Akiyama do not disclose or suggest the similar features of claim 1.

Claim 6

It is submitted that Nakatsu and Akiyama do not disclose or suggest the following features of independent claim 6 as it was considered by the Examiner in the Office Action of September 16, 2008:

a controller to monitor the tracking control signal, and control the track jumping based on the tracking control signal, wherein:

if the controller determines that the tracking control signal indicates that the position of the optical pickup is within a predetermined range of a center of the track, the controller immediately outputs a track jump start control signal to the driver to perform the track jump; and

if the controller determines that the tracking control signal indicates that the position of the optical pickup is not within the predetermined range, the controller delays outputting the track jump start control signal to the driver until the tracking control signal indicates that the position of the optical pickup is within the predetermined range.

The Examiner considers Akiyama to teach these features of claim 6. However, as discussed above in connection with claim 1, the only element in FIG. 2 of Akiyama that judges the position of the light spot between the first jump and the second jump is the tracking control unit 6. However, the tracking control unit 6 does not output a signal to the track jump control unit 8 to tell the track jump control unit 8 that the light spot is centered in the track at position P2 so that the track jump control unit 8 can generate the track jump start control signal for the second jump. Rather, the track jump control unit 8 generates the track jump start control signal for the second jump as soon as the track jump control unit 8 controls the switch 9 in FIG. 2 to switch from position a to position b. Furthermore, it is submitted that nothing whatsoever in Akiyama discloses or suggests that the track jump control unit 8 controls the switch 9 in FIG. 2 to switch from position a to position b based on an actual judgment that the light spot is centered in the track at position P2.

Furthermore, although FIG. 2 of Akiyama shows that the track jump control unit 8 receives the tracking error signal TES, Akiyama only discloses that the track jump control unit 8 uses the tracking error control signal TES to detect the zero crossing points Z1 and Z3 in FIG. 3 of Akiyama during the first and second jumps. It is submitted that nothing whatsoever in Akiyama discloses or suggest that the track jump control unit 8 delays outputting the track jump start control signal to start the second jump until the tracking control signal indicates that the light spot is centered in the track at position P2.

For at least the foregoing reasons, it is submitted that Nakatsu and Akiyama do not disclose or suggest the features of claim 6 discussed above.

Furthermore, it is submitted that Nakatsu and Akiyama do not disclose or suggest the feature "if the controller determines that the tracking control signal indicates that the position of the optical pickup is within a predetermined range of a center of the track, the controller immediately outputs a track jump start control signal to the driver to move the optical pickup directly to a target track of the optical disc" now recited in claim 6 as amended in this Amendment for at least the same reasons discussed above that Nakatsu and Akiyama do not disclose or suggest the similar feature of claim 1.

Claim 9

It is submitted that Nakatsu and Akiyama do not disclose or suggest the following features of independent claim 9 as it was considered by the Examiner in the Office Action of September 16, 2008.

judging whether a position of the optical pickup is within a predetermined range relative to a center of the track at a time of a track jump command;

immediately outputting the track jump command to the optical pickup if the optical pickup is within the predetermined range; and

delaying the outputting of the track jump command to the optical pickup if the optical pickup is not within the predetermined range.

The Examiner considers Akiyama to teach these features of claim 9. However, as discussed above in connection with claim 1, the only element in FIG. 2 of Akiyama that judges the position of the light spot between the first jump and the second jump is the tracking control unit 6. However, the tracking control unit 6 does not output a signal to the track jump control unit 8 to tell the track jump control unit 8 that the light spot is centered in the track at position P2 so that the track jump control unit 8 can generate the track jump start control signal for the second jump. Rather, the track jump control unit 8 generates the track jump start control signal for the second jump as soon as the track jump control unit 8 controls the switch 9 in FIG. 2 to switch from position a to position b. Furthermore, it is submitted that nothing whatsoever in Akiyama discloses or suggests that the track jump control unit 8 controls the switch 9 in FIG. 2

to switch from position a to position b based on an actual judgment that the light spot is centered in the track at position P2.

Furthermore, it is submitted that Nakatsu and Akiyama do not disclose or suggest "immediately outputting the track jump command to the optical pickup to move the optical pickup directly to a target track of the optical disc if the optical pickup is within the predetermined range" as now recited in claim 9 as amended in this Amendment for at least the same reasons discussed above that Nakatsu and Akiyama do not disclose or suggest the similar feature of claim 1.

Claims 10-12, 14, and 16

It is submitted that Nakatsu and Akiyama do not disclose or suggest the following features recited in dependent claims 10-12:

wherein the track jump start control signal is a kick voltage, and the track jump end control signal is a brake voltage,

or the following feature recited in dependent claim 14:

wherein the track jump command is a kick voltage that is output to a driver of the optical pickup,

or the following feature recited in dependent claim 16.

wherein the track jump stop command is a brake voltage that is output to a driver of the optical pickup.

The Examiner states as follows:

The combined disclosures of Nakatsu and Akiyama teach the limitations of claims 4, 6 and 9, respectively. They fail, however, to expressly teach that the jump-start control signal is a "kick voltage" or that the jump-end control signal is a "brake voltage". However, The [sic] Examiner takes the [sic] Official Notice that it is well known in the art and would be obvious to apply a kick voltage and a brake voltage for the purpose of forcibly moving the optical pickup in an axial direction (see pertinent references provided below by the Examiner).

On page 11 of the Office Action, the Examiner states as follows:

SHIOURA (US 2005/0237889) teaches use of kick voltage and brake voltage.

LEE (US 2005/0201224) teaches use of kick voltage and brake voltage.

ASAKURA (US 20020051411) [sic] teaches use of kick voltage and brake voltage.

However, since the Examiner has cited Shioura, Lee, and Asakura to show the features he is taking Official Notice of, it is not understood why the Examiner is taking Official Notice of these features, since the whole point of taking Official Notice is to avoid the need to cite a reference. Furthermore, despite the Examiner's statement that he is taking Official Notice, the Examiner is actually relying on Shioura, Lee, and Asakura to support the rejection. Accordingly, it is submitted that the Examiner was required to include Shioura, Lee, and Asakura in the statement of the rejection pursuant to MPEP 706.02(j), which states as follows on MPEP page 700-48:

Where a reference is relied on to support a rejection, whether or not in a minor capacity, that reference should be positively included in the statement of the rejection. See *In re Hoch*, 428 F.2d 1341, 1342 n.3 166 USPQ 406, 407 n. 3 (CCPA 1970).

Accordingly, should the Examiner repeat the rejection, it is respectfully requested that the Examiner include Shioura, Lee, and Asakura in the statement of the rejection in the next Office Action.

Furthermore, while the Examiner may take Official Notice of facts not in the record or to rely on "common knowledge" in making a rejection, the Examiner cannot take Official Notice that it would have been obvious to modify a reference, as the Examiner has done here in his statement that "The [sic] Examiner takes the [sic] Official Notice that it . . . would be obvious to apply a kick voltage and a brake voltage for the purpose of forcibly moving the optical pickup in an axial direction," because obviousness is a legal conclusion, not a fact. Rather, it is submitted that the Examiner is required to clearly articulate "the reason(s) why the claimed invention would have been obvious" in order to establish a *prima facie* case of obviousness under 35 USC 103(a). See MPEP 2143 on MPEP page 2100-128.

Here, it is submitted that the Examiner was required to explain how the combination of Nakatsu and Akiyama would be modified to use the kick voltage and brake voltage allegedly

disclosed by Shioura, Lee, and Asakura, and to explain why one of ordinary skill in the art would have wanted to "forcibly mov[e] the optical pickup in an axial direction" as proposed by the Examiner. Since the Examiner has not done this, it is submitted that the Examiner has not established a *prima facie* case of obviousness with respect to claims 10-12, 14, and 16.

Conclusion—Rejection 1

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 1-6 and 9-16 (i.e., claims 1, 4, 6, 9-12, 14, and 16 discussed above and claims 2, 3, 5, 13, and 15 depending directly or indirectly from claims 1, 4, and 9) under 35 USC 103(a) as being unpatentable over Nakatsu in view of Akiyama be withdrawn.

Rejection 2

Claims 7 and 8 have been rejected under 35 USC 103(a) as being unpatentable over Nakatsu in view of Akiyama and Ceshkovsky et al. (Ceshkovsky) (U.S. Reissued Patent No. RE32,574). This rejection is respectfully traversed.

It is submitted that Nakatsu, Akiyama, and Ceshkovsky do not disclose or suggest the following feature recited in dependent claim 7 as it was considered by the Examiner in the Office Action of September 16, 2008:

wherein after the controller has output the track jump start signal to the driver, the controller calculates a target track to be jumped to and sets an output time of a track jump end signal,

or the following feature now recited claim 7 as amended in this Amendment:

wherein after the controller has output the track jump start signal to the driver, the controller calculates the target track and sets an output time of a track jump end signal.

The Examiner states as follows:

Regarding claim 7 and as best understood with regard to the USC 112, second paragraph rejection above,

....

However, Nakatsu fails to expressly teach that the controller calculates a target track to be jumped.

CESHKOVSKY teaches that the controller calculates a target track to be jumped to (**column 6:55-60 discloses that the controller calculates the drive signal as a function of the distance to be traveled**).

The Examiner's statement "**[r]egarding claim 7 and as best understood with regard to the USC 112, second paragraph rejection above**" appears to indicate that the Examiner has based on the rejection on his mistaken understanding that the applicant means to recite "...controller calculates a **distance to the target track to be jumped to**" or "...controller calculates the **drive signal needed to travel to the target track to be jumped to**" as set forth in the Examiner's explanation of the rejection of claims 7 and 8 under 35 USC 112, second paragraph. However, as discussed above, the applicant intends claim 7 as it was considered by the Examiner in the Office Action of September 16, 2008, to mean exactly what it says—that "the controller calculates a target track to be jumped to." Also, the applicant intends claim 7 as amended in this Amendment to mean exactly what it now says—that "the controller calculates a target track." Accordingly, it is submitted that the rejection of claims 7 and 8 is improper because it is based on a misinterpretation of the language of claim 7 by the Examiner.

Furthermore, column 6, lines 55-60, of Ceshkovsky relied on by the Examiner states as follows:

In accordance with the present invention, the carriage controller 52 prescribes a preferred sequence for applying the drive signals to the carriage motor 28, as a function of the distance between [sic] the track currently being read by the player and the track targeted for retrieval in the function generator 50, for retrieval of the information stored in the target track.

However, it is not seen where this passage or any portion of Ceshkovsky discloses or suggests the feature "the controller calculates a target track to be jumped to" recited in claim 7 as it was considered by the Examiner in the Office Action of September 16, 2008, or the feature "the controller calculates the target track" now recited in claim 7 as amended in this Amendment. Furthermore, the Examiner has not explained why the fact that "the controller calculates the drive signal as a function of the distance to be traveled" as explained by the

Examiner allegedly provides this feature of claim 7 as it was considered by the Examiner in the Office Action of September 16, 2008.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 7 and 8 (i.e., claim discussed above and claim 8 depending therefrom) under 35 USC 103(a) as being unpatentable over Nakatsu in view of Akiyama and Ceshkovsky be withdrawn.

Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

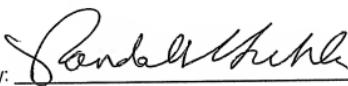
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with the filing of this paper, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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